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EXAMINER

WANG, TED M

ART UNIT PAPER NUMBER

2611

DATE MAILED: 06/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 09/767,850	Applicant(s) PEETERS ET AL.	
	Examiner Ted M. Wang	Art Unit 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 April 2006 amendment.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5,7 and 10 is/are rejected.
- 7) ☒ Claim(s) 3,4,6,8,9,11 and 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION***Response to Arguments***

1. Applicant's arguments, filed on 11/2/2004, have been fully considered but they are not persuasive. The Examiner has thoroughly reviewed Applicants' arguments but firmly believes that the cited reference to reasonably and properly meet the claimed limitations.

Independent Claim 1***(1) Applicants' argument –***

(a) "Therefore, as discussed above, and contrary to the Examiner's assertion, in the APA, the parameter values are not grouped in a subset and are individually transferred as constellation information, consequently leading to long initialization times. Assuming arguendo the bit values (b_i) and the gain values (g_i) could be considered a subset and assuming Mukherjee discloses the claimed interpolation, there would be no need to retrieve parameter values for carriers by interpolation in the APA since in the APA, the parameter values are not grouped into subsets and all of the parameter values are individually transferred." as recited; and

(b) "There is no teaching or suggestion that parameter values for all carriers in a carrier subset can be retrieved through interpolation." As recited; and

(c) "Consequently, the combination of Mukherjee with the APA is not obvious and it is apparent that the Examiner's reasoning is merely based upon hindsight upon viewing the Applicant's invention." as recited.

Examiner's response –

In response to applicant's argument as described in the above paragraph, Examiner submits that

With respect to argument (a), the claim 1 as claimed by the instant application does not specify the definition of the "carrier subset". The ANSI T1 413-1998 as recited in page 1 lines 11-12 of the specification. The ADSL transceiver initialization procedure is according to ANSI T1 413-1998, paragraph 9.8.13 (C-B&G). C-B&G shall be used to transmit to the ATU-R the bits and gains information (i.e., $b_1, g_1, b_2, g_2, \dots, b_{31}, g_{31}$) that are to be used on the upstream carriers. b_i indicates the number of bits to be coded by the ATU-R transmitter onto the i -th upstream carrier; g_i indicates the scale factor, relative to the gain that was used for that carrier during the transmission of R-MEDEL, that shall be applied to the i -th upstream carrier. Here (b_i, g_i) can be considered as an individual subset or $(b_1, g_1, b_2, g_2, \dots, b_{31}, g_{31})$ can be considered as a single subset that meets the limitation "at least one respective carrier subset" as recited.

Furthermore, the claim 1 as claimed by the instant application fails to specify the definition of the "interpolation" the respective carrier subset can be retrieved through "interpolation". The Mukherjee's reference merely used to show that the recovery process cited in the Mukherjee's reference, Fig.4 element 44C, Fig.9 element 96, column 22 lines 27-34), involve the interpolation process. Since the Figs.4 is an ADSL modem and Fig.9 is a detailed block diagram of 64C and 44C at the receiving side of the Fig.4, and the initialization process is based on the ADSL ANSI T1-413 standard (column 22 lines 18-20), it is clear that the Fig.4 can be used to receive the downstream signal with constellation information

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(b_i, g_i) and retrieve them through interpolation (Fig.9 element 96) then use them to control the upstream modulator (Fig.4 elements 42C-52C).

With respect to argument (b), the explanation of all the limitation is already addressed in the above paragraph.

With respect to argument (c), The Mukherjee's reference, Fig.4 element 44C, Fig.9 element 96, column 22 lines 27-34, involve the interpolation process. Since the Figs.4 is an ADSL modem and Fig.9 is a detailed block diagram of 64C and 44C at the receiving side of the Fig.4, and the initialization process is based on the ADSL ANSI T1-413 standard (column 22 lines 18-20), it is clear that the Fig.4 can be used to receive the downstream signal with constellation information (b_i, g_i) and retrieve them through interpolation (Fig.9 element 96) then use them to control the upstream modulator (Fig.4 elements 42C-52C).

Thus, for the explanation addressed in the above paragraph, the rejection under 35 U.S.C. 103(a) with APA and Mukherjee's reference is adequate.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

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Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1, 2, 5, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art of the instant application in view of Mukherjee (US 6,226,322).

□ With regard claim 1, the admitted prior art of the instant application teaches that a constellation information transmitting arrangement for a multi-carrier transmitter or a multi-carrier receiver of a multi-carrier system (page 1 lines 3-15), said arrangement comprising:

means for producing carrier constellation information indicative for constellations where respective carriers will be modulated with by said multi-carrier transmitter (page 1 lines 7-20), and

means for transmitting said carrier constellation information (page 1 lines 11-21), and

wherein said means for producing carrier constellation information is adapted to produce for at least one respective carrier subset a set of parameter from which constellations of all carriers (page 1 lines 7-23). The ANSI T1 413-1998 as recited in page 1 lines 11-12 of the specification. The ADSL transceiver initialization procedure is according to ANSI T1 413-1998, paragraph 9.8.13 (C-B&G). C-B&G shall be used to transmit to the ATU-R the bits and gains information (i.e., $b_1, g_1, b_2, g_2, \dots, b_{31}, g_{31}$) that are to be used on the upstream carriers. b_i indicates the number of bits to be coded by the ATU-R transmitter onto the i -th upstream carrier; g_i indicates the scale factor, relative to the gain

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that was used for that carrier during the transmission of R-MEDEL, that shall be applied to the i -th upstream carrier. Here (b_i, g_i) can be considered as an individual subset or $(b_1, g_1, b_2, g_2, \dots, b_{31}, g_{31})$ can be considered as a single subset that meets the limitation "at least one respective carrier subset" as recited.

The admitted prior art of the instant application teaches all of the subject matter as described in the above paragraph except for specifically teaching said at least one respective carrier subset can be retrieved through interpolation.

However, Mukherjee teaches that at least one respective carrier subset can be retrieved through interpolation (Fig.4 element 44C, Fig.9 element 96, column 22 lines 27-34). Where Figs.4 is an ADSL modem and Fig.9 is a detailed block diagram of 64C and 44C at the receiving side of the Fig.4. The initialization process is based on the ADSL ANSI T1-413 standard, column 22 lines 18-20. i.e., the Fig.4 can be used to receive the downstream signal with constellation information (b_i, g_i) and retrieve them through interpolation (Fig.9 element 96) then use them to control the upstream modulator (Fig.4 elements 42C-52C).

It is desirable that at least one respective carrier subset can be retrieved through interpolation in order to meet the desired sample input rate of a digital transceiver (column 22 lines 27-34) so that the communication quality and flexibility can be improved. Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention was made to include the apparatus as taught by Mukherjee in which, at least one respective carrier subset can be retrieved through interpolation, into the admitted prior art of the instant application's receiving circuit so as to meet the desired sample input rate of a

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digital transceiver (column 22 lines 27-34) so that the communication quality and flexibility can be improved.

- With regard claim 2, the limitation that a set of parameter values consists of a first number of bits and a first gain value can further be taught in page 1 lines 12-20.
- In regard claim 5, the admitted prior art of the instant application further teaches that the arrangement further contains means to produce a description of said at least one respective carrier subset (page 1 lines 12-13), and means to transmit said description of said at least one respective carrier subset (page 1 lines 13-23).
- In regard claim 7, the admitted prior art of the instant application further teaches that constellation information receiving arrangement for use in a multi-carrier transmitter or multi-carrier receiver of a multi-carrier system, said arrangement comprising:
 - means for receiving carrier constellation information indicative for constellations (page 1, lines 21-23) where respective carriers will be modulated with by said multi-carrier transmitter (page 1, lines 11-15), and
 - means for determining said constellations from said carrier constellation information (page 1, 21-23, since the constellation information, bits and gains information, is used to control the upstream data modulator, it is inherent that the constellation information must be determined by the receiving arrangement before controlling the pre-specified modulation as defined by the ANSI T1-413 standard via upstream link.).

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All other limitation is contained in claim 1. The explanation of all the limitation is already addressed in the above paragraph.

2. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art of the instant application and Mukherjee (US 6,226,322) as applied to claim 7 above, and further in view of Gultekin et al. (US 6,215,793).

- In regard claim 10, the admitted prior art of the instant application further teaches means to receive a description of said at least one respective carrier subset (page 1 lines 21-23).

The admitted prior art of the instant application and Mukherjee teach all limitation described in the above paragraph except specifically teaching means to interpret said description of said at least one respective carrier subset.

However, Gultekin et al. teaches means to interpret said description of said at least one respective carrier subset (column 5 lines 30-58, and column 7 lines 29-56).

It is desirable that the receiving arrangement to interpret said description of said at least one respective carrier subset in order to select a proper QAM modulation (column 5 lines 50-56) so that the communication quality is improved. Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention was made to include the means function as taught by Gultekin et al. in which, means to interpret said description of said at least one respective carrier subset, into the admitted prior art of the instant application and Mukherjees' receiver in order to select a proper QAM modulation so that the communication quality is improved.

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Allowable Subject Matter

3. Claims 3, 4, 6, 8, 9, 11, and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

5. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ted M. Wang whose telephone number is 571-272-3053. The examiner can normally be reached on M-F, 7:30 AM to 5:00 PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on 571-272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ted M Wang
Examiner
Art Unit 2611

Ted M. Wang


KEVIN BURD
PRIMARY EXAMINER